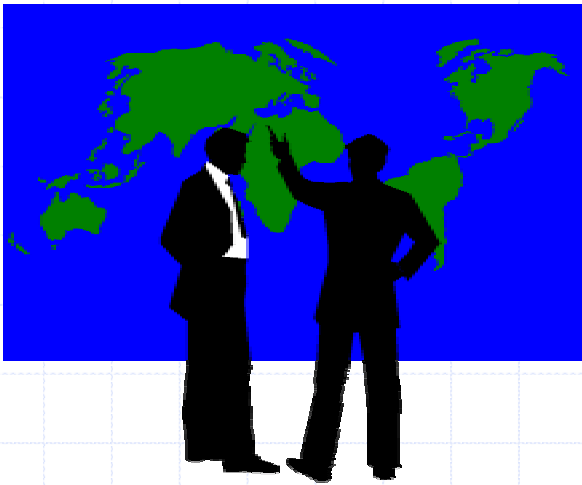




U.S. Department of Energy

OAK RIDGE NATIONAL LABORATORY

CHP Subcontractors Coordination Review Meeting



April 22, 2004
Oak Ridge National Laboratory's
Washington D.C. Office



- Title - "*CHP Awareness and Barrier-Busting Technical Assistance to Facilitate Implementation of CHP in the District Energy Sector*"
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Background

- Industry assoc. formed in 1909, 900 members
- District energy companies, manufacturers, service providers, utilities, colleges/universities
- Conferences –
 - 94th Annual Conf June 2003, Philadelphia, PA (450+)
 - 17th Annual Campus Energy Conf, Feb 2004, San Diego (240+)
 - 95th Annual Conf & Trade Show June 27-30, 2004, Seattle
 - 18th Annual Campus Energy Conference, March 2005 Washington, DC – (opportunity for DOE/ORNL)
- *District Energy* magazine, workshops, advocacy
- www.districtenergy.org

Previous CHP-Related Work for ORNL

CHP in Colleges & Universities: Understanding the Market and Facilitating its Growth

- Phase I – *Determine current size of market*
 - 1208 sites, contacted 474
 - Collected/posted detail plant inventory on 160+ campus systems - Size, age, scale, assets, fuel, plans
 - Total - 967 MW; 932,400 Tons; 4,200,000 Lbs/hr
 - www.districtenergy.org/CHP_Census
- Phase II – *Understand market drivers*
 - Develop/posted 9 CHP Campus Case studies – lessons learned; project drivers and champions
 - www.districtenergy.org/CHP_Case_Studies
 - “How to Build CHP on Campus Workshop” & Guidebook; 240+ attend 17th Campus Energy Conf
 - Inform on economics; emissions; siting; market drivers
 - CHP Guidebook w/ video interviews:
www.districtenergy.org/guidebook/CHP.Webdoc.Homepage.htm

Goals and Objectives of Task(s)

■ *Goal – Get CHP Built in District Energy Sector*

1. Identify high probability potential CHP candidates in district energy sector (focus on colleges, universities & downtown)
2. Assess data from Phase I and II census
3. Perform initial screening
 - Value of offset power purchases
 - Value of offset thermal production
 - Size and relationship of thermal and power loads
 - Thermal and power load factors
 - Age of existing capacity and replacement plans
 - Temperature/pressure of thermal energy
 - Fuel availability and costs
 - Capital and operating cost comparisons

Goals and Objectives of Task(s)

4. Assess Qualitative Factors

- host endorsement or stature of “champion”
- local support or opposition
- siting and permitting status
- funding or bonding capability
- urgency (load growth; aging assets; compliance)

5. Analyze and Rank based on metrics

6. Provide Technical Assistance as needed

- Site visits, technical support
- Provide “clearinghouse” at IDEA
- Support roadmapping/stakeholder efforts

Phase III Progress on Tasks

- Screened 71 CHP prospects to 24 Top Priority Projects
- 445+ MW CHP growth “near term”
- “Project Analyzer” screening tool to evaluate projects on 20 specific metrics (ie. Load factor)
- Listed and correlated common factors and hurdles across regions (access to \$; regulatory; NIMBY)
- Finalized and submitted report November 2003

Phase III Findings

- Strong campus CHP market driven by:
 - Real load growth from new building stock
 - Excellent thermal/power characteristics
 - Strong track record of success by peers in sector
 - Planned capital replacement/expansion (master planning)
 - High reliability needs (critical research/health care)
 - Good project risk profile (longevity/credit/ROI hurdles)
- Some institutional inertia – need support

Coordination with Stakeholder Groups

- Census data; Case studies; CHP Guidebook – links available
- Activities shaped by district energy industry needs
 - (tech assistance; permit support; promotion)
- Project synergy with EPA CHP Partnership (technical & environmental)
- Alliance with APPA (Higher Education Facilities Officers) and APPA Institute

Deliverables

- List of potential CHP candidates
- Prioritized list after initial screening of candidates
- Revised list after analysis of “other” market conditions
- Perform analysis and ranking of potential projects
- Provide technical, economic analysis and outreach support
- Announce Project Victories

Format

- Hard copy
- Hard copy
- Hard copy
- Hard copy
- Hard copy
- On Line

Timeline Deliverables

Availability

- Identify potential CHP candidates
- Perform initial screening of candidates
- Evaluate other market conditions to campus CHP decisions
- Perform analysis and ranking of potential projects
- Provide technical, economic analysis and outreach support

- May 03
- May – July 03
- May – July 03
- July – Sept 03
- Sept – ongoing

Sensitivity of Reports

- Availability to ORNL
 - Commercial sensitivities preclude full public disclosure
 - Project permitting; utility and fuel negotiations; financing
- Project announcements/milestones will be publicized to all stakeholders



Questions?



Thank You